

Notice of Allowability

Application No.

10/696,011

Examiner

Suzanne M. Noakes, Ph.D.

Applicant(s)

BERCHTOLD, HARALD

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response to non-final OA filed 14 September 2006.
2. ☒ The allowed claim(s) is/are 1-8, 12-14, 16 and 22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Mark Nelligan on 25 October 2006.

The application has been amended as follows:

In the claims:

- 1) Rewrite claim 1: A crystal of a human insulin analog, wherein said analog consists of the human insulin sequence except that asparagine (Asn) in position B3 of the B chain is replaced by lysine (Lys) and lysine (Lys) in position B29 of the B chain is replaced by glutamic acid (Glu), the crystals being present in space group R3 (No. 146) with unit cell dimensions $a=81.5 \pm 1.0 \text{ \AA}$ and $c=33.3 \pm 1.0 \text{ \AA}$.
- 2) In claim 8: In the first line, between 'analog is' and 'a compound', please insert - - - further characterized as - - -.
- 3) In claim 8, p. 6, line starting with B1, delete - - - or a hydrogen atom - - -.
- 4) Cancel claims 15, 17-21.
- 5) Rewrite claim 16 as follows:

A process for the preparation of one or more crystals of claim 1 comprising the steps of:

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- a) dissolving a zinc-free, amorphous powder of the insulin analog of claim 1 in a suitable liquid to a concentration of 15-25 mg/ml;
- b) precipitating the crystal using a suitable precipitant selected from:
 - i) ammonium dihydrogenphosphate or diammonium hydrogenphosphate in combination with trisodium citrate at $\text{pH } 5.5 \pm 1.5$, or
 - ii) ammonium sulfate in combination with polyethylene glycol of various molecular weights at $\text{pH } 6.0 \pm 1.5$; and
- c) isolating and drying said crystals.

Rejoinder

2. The restriction requirement recited in the non-final Office action from 09 March 2006 between Groups I and III is hereby withdrawn. Group III, claim 22 is rejoined has been fully examined for patentability in accordance with 37 CFR 1.104.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance: The claims are drawn to crystals of human insulin analogs that crystallize in space group R3 with unit cell parameters of $a=81.5 \pm 1.0 \text{ \AA}$ and $c=33.3 \pm 1.0 \text{ \AA}$, wherein the analog consists of human insulin except that Asn B3 is substituted by Lys and Lys B29 is substituted by Glu. While there is prior art that teaches this human insulin analog protein in solution, there is no prior art which teaches the same in a protein crystal and because of the unpredictability of the art of protein crystallography the protein crystal product of the

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instant invention is non-obvious. The 35 U.S.C. 102 art of record and rejection of claims 12-14 has been reconsidered and the rejection withdrawn. **The allowed claims are 1-8, 12-14, 16 and 22.**

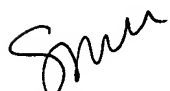
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suzanne M. Noakes, Ph.D. whose telephone number is 571-272-2924. The examiner can normally be reached on Monday to Friday, 7.00am to 3.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SMN
25 October 2006



DAVID J. STEADMAN, PH.D.
PRIMARY EXAMINER